Ethiopian Health Professionals' Licensure Examination
PHARMACY EXAM

Megabit 2012/March 2020
PART ONE

BOOKLET CODE: 017
Number of Items: 100

SUBJECT CODE: 07
Time Allowed: 2:30 hours

DIRECTIONS: each of the following questions is followed by four possible alternative answers. Read each question carefully and **blacken** the letter of your best choice on the separate answer sheet provided.

1. A pharmacist received numerous packs of medicines as part of previous order. Upon inspection of the delivery, the pharmacist saw that one of the medicines was labeled as: "Protect from moisture".

   What is the most appropriate storage condition for the medicine?
   (A) Exactly 60% relative humidity
   (B) 60%- 80% relative humidity
   (C) Less than 60% relative humidity
   (D) 60%- 75% relative humidity

2. A junior pharmacist was ordered by the head of a hospital pharmacy to identify materials to be used as primary packaging containers. In the process, the pharmacist referred manuals of the national regulatory authority.

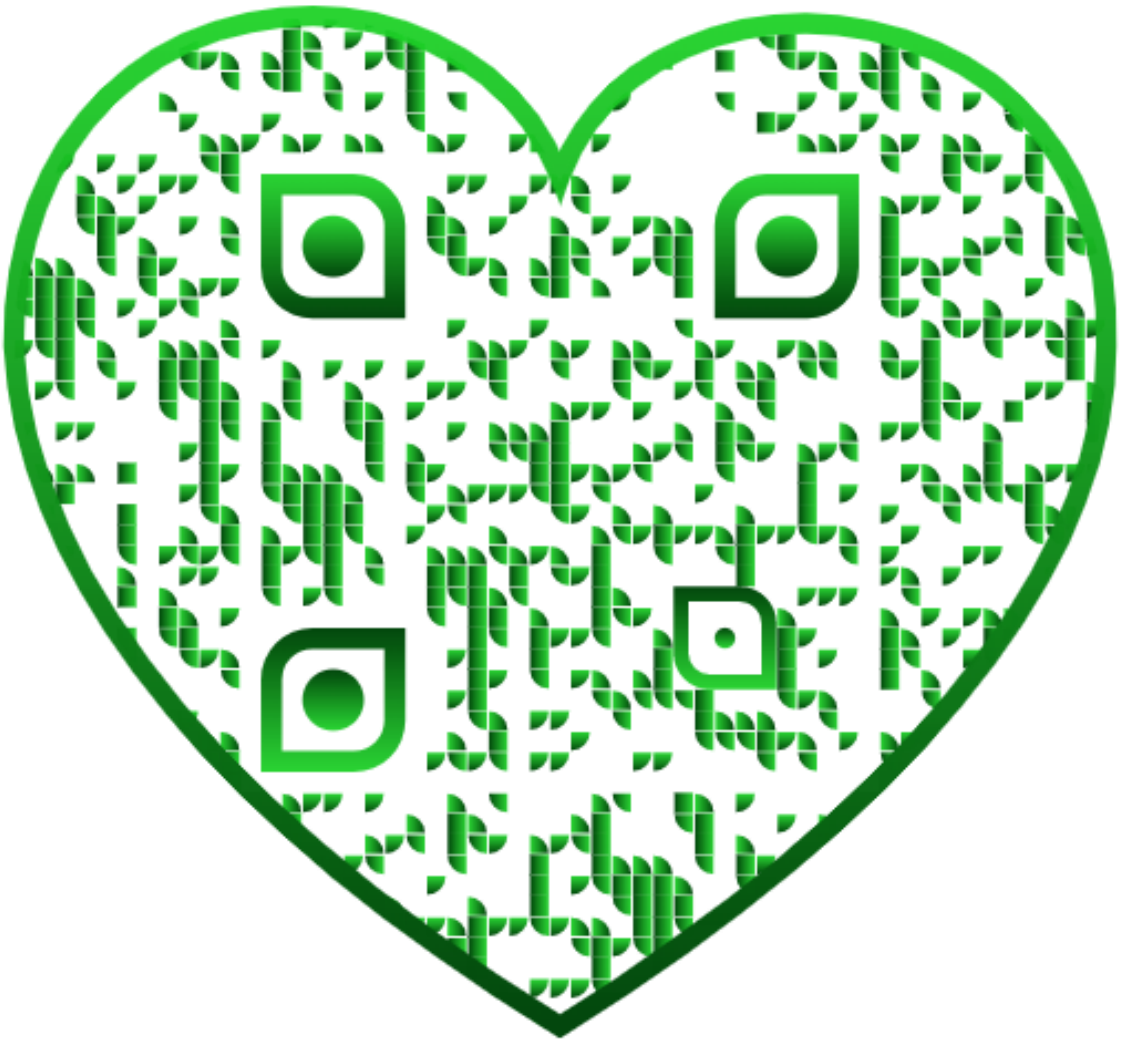
   What is the least valuable primary packaging material for medicines?
   (A) Glass
   (B) Paper
   (C) Plastic
   (D) Aluminum

3. A tertiary care hospital pharmacy uses fluid location system to stock pharmaceuticals. A junior pharmacist was assigned to organize the medicines so, the pharmacist asked the store manager for guidance on how to properly classify the stock.

   What is the most recommended method of stock classification?
   (A) Alphabetical order
   (B) Commodity code
   (C) Random bin
   (D) Dosage form

4. An inpatient dispensary unit is planning to design a dispensing technique for a high patient flow setting that can be applied with a low material, supply and labor cost.

   What is the most applicable dispensing technique for this setting?
   (A) Individual medication
   (B) Unit-dose system
   (C) Automated medication
   (D) Bulk ward stock



5. A medical equipment supplier delivered a magnetic resonance imaging (MRI) machine to a tertiary care hospital. A pharmacist was assigned to receive the machine and apply the routine inventory management process.

What appropriate details should be included in the inventory records?
(A) Supplier company name, routes of transport, arrival date and expiry dates
(B) Manufacturer name, model, identification number, power requirements
(C) Order date, list of MRI operators, manufacturer and supplier company profile
(D) Installation date, name of the technician who installed the MRI, physician's address

6. A community pharmacy stocked a large amount of Dextromethorphan syrup in anticipation of common cold and cough cases due to a long duration of cold weather.

What is the most likely type of stock used by the pharmacy?
(A) Safety Stock
(B) Quarantine Stock
(C) Pipeline Stock
(D) Seasonal Stock

7. It is noted that Clopidogrel is more effective than Aspirin in preventing vascular events of ischemic stroke. In addition, Aspirin is an over the counter while Clopidogrel remains a by-prescription only medication.

What is the best reason for Clopidogrel to be a by-prescription only medication?
(A) High cost
(B) Clinical effectiveness
(C) Adverse event
(D) Therapeutic class

8. A store pharmacist at specialized mental hospital was suspected by the medical director for involvement in fraudulent activities of stocking expired Phenobarbital. The director forwarded the issue for the internal audit committee for investigation.

What stock record system could be most likely manipulated by the store pharmacist?
(A) Stock Card
(B) Bin Card
(C) Ledger Card
(D) Vertical file card

9. A pharmacist working in a hospital with a very high transaction of narcotic drugs keeps the prescription for five years and disposes the papers by himself. In addition, the pharmacist regularly reports the consumption and prescribing pattern.

What good dispensing practice was breached by the pharmacist?
(A) Keeping the prescription papers for fewer years
(B) Assessing the prescribing pattern of physicians
(C) Making unnecessary report of drug consumption
(D) Disposing the prescription papers by himself

10. A senior clinical pharmacist in a tertiary hospital frequently encounters an order sheet that states "resume pre-op meds".

What is the most likely problem the pharmacist might recognize in these orders?
(A) Omission of information
(B) Poor prescription writing
(C) Illegal prescription paper
(D) Inappropriate drug selection

11. A 34-year-old patient who is taking Warfarin for the treatment of deep vein thrombosis came to the pharmacy and complained about heartburn for the last two days. The pharmacist, in consultation with the physician, wanted to avoid a medicine that could interact with Warfarin.

Which drug would most likely increase the toxicity of Warfarin?
(A) Famotidine
(B) Ranitidine
(C) Cimetidine
(D) Omeprazole

12. A 38-year-old patient diagnosed with oropharyngeal candidiasis was taking Ketoconazole tablet twice a day for the last three days. The patient used to take the medicine at 8:00 AM and 8:00 PM and complained heart burn after meals for the last two days. As a result, the physician prescribed Omeprazole 20mg every day and the patient came to pharmacy to collect the medicine.

What is the most appropriate instruction to be given for this patient?
(A) Take Omeprazole 30 minutes before meal at 8:00 AM and take Ketoconazole after meal
(B) Take Omeprazole 30 minutes before meal and at least two hours before Ketoconazole
(C) Take both Omeprazole and Ketoconazole 30 minutes before meal at 8:00 PM
(D) Take both Omeprazole and Ketoconazole after meal at 8:00 AM

13. A 27-year-old pregnant woman who was diagnosed with hypothyroidism, osteoporosis and breakthrough vaginal bleeding came to a pharmacy with a normal prescription paper that calls for Synthetic Thyroxine, Alendronate drug and combined oral contraceptives respectively. Other than writing three drugs together, the prescription paper is well-written. The pharmacist, however, politely refused to dispense the prescription.

What is the mostly likely reason for the refusal?
(A) Polyphamracy written in a single prescription paper
(B) Thyroxine's severe drug interaction with Alendronate
(C) Safety of combined oral contraceptive is doubtful
(D) Prescription does not conform to legal requirements

14. A mother of 10-year-old child with mild pain came to the dispensary with a prescription stating 81 mg of Aspirin tab P.O. BID.

What is the problem of this prescription paper?
(A) Higher dose
(B) Wrong indication
(C) Route of administration
(D) Frequency of administration

15. A physician has diagnosed a patient with Enterotoxigenic (cholera-like) diarrhea and prescribed 400 mg Sulfamethoxazole and 160 mg Trimethoprim (Co-trimoxazole) twice daily P.O. for three days.

What prescription error could be identified by the pharmacist?
(A) Inappropriate strength of the medication
(B) Inappropriate frequency of treatment
(C) Inappropriate duration of therapy
(D) Inappropriate route of administration

16. A pharmacist who was assigned to mentor and monitor pharmacy students, observed one of the students about to dispense a prescribed medication. The prescription dictates a drug for gastro-esophageal reflux disease which is stated as "Rabeprazole 20 mg cap qd for 10 days, use after a meal". The pharmacist politely approached the student and made some corrections.

What possible modification could be made on the prescription?
(A) Dose of the drug
(B) Frequency of administration
(C) Duration of therapy
(D) Direction to use

17. A patient diagnosed with severe pneumonia came with a prescription which states 25mg/kg/ BID for five days. The drug is available in 500 mg /2ml formulation and the patient weight was 35kg.

What quantity of drug should be administered at a time?
(A) 1.75 ml
(B) 3.5 ml
(C) 5.25 ml
(D) 7 ml

18. The physician prescribed Naltrexone 25 mg PO initially and then tapered doses to 100 mg PO every other day, if no withdrawal signs appear. The formulation on hand is Naltrexone 50 mg tablet.

How much dose the pharmacist should dispense as initial dose?
(A) 1/2 tablet
(B) 1/3 tablet
(C) 1/4 tablet
(D) 1/5 tablet

19. A patient whose weight is 65kg started on 80mg of drug "D". The drug is given as 1hour infusions every six hours. The desired new steady state peak concentration for drug "D" is 8 mg/ml.

What dose of drug "D" should be administered to reach the desired peak concentration?

(A) 120 mg over 2 hour
(B) 128 mg over 1 hour
(C) 118 mg over 2 hour
(D) 110 mg over 1 hour

20. A patient with severe renal dysfunction receives a 1gm dose of Vancomycin IV injection and peak concentration drawn 2 hours after the infusion is 40 mg/l. A concentration determined 24 hours later is 34 mg/ml. But the pharmacist wants to wait until the concentration reaches 10 mg/ml before administering a second dose.

In how many days will the concentration reach 10 mg/ml?

(A) 7days
(B) 7.5 days
(C) 8 days
(D) 8.5 days

21. A 3-year-old child diagnosed with acute upper respiratory tract infection was prescribed Amoxicillin 250mg/5ml PO TID for 7 days. The drug is reconstituted to a solution of 10mg/1ml. A pharmacist advised the parents to use teaspoon for drug administration.

How much Amoxicillin solution would one teaspoon contain?

(A) 150 mg
(B) 75 mg
(C) 100 mg
(D) 50 mg

22. A primary health care provider prescribed 400 mg of Levofloxacin tablet PO daily for seven days. But the drug was available in 200 mg tablet formulation.

How many tablets should the patient take each day?

(A) 2 tablets
(B) 3 tablets
(C) 4 tablets
(D) 5 tablets

23. You are working in a pharmaceutical compounding room and asked to prepare a 15 ml of a 0.3 % w/v solution from a 20 % w/v solution.

How much of a 20 % w/v solution would be required?

(A) 1.2 ml
(B) 2.2 ml
(C) 3.2 ml
(D) 4.2 ml

24. A 40-year-old man came to a primary hospital pharmacy with a prescription of simple ointment BP. The drug has the following details

- Patient: M. K
- Direction: MDU
- Mitte: 30 g

What is the most appropriate container to dispense this medication?

(A) Amber fluted bottle
(B) Amber table bottle
(C) Cardboard carton
(D) Collapsible tube

25. A patient with an extemporaneous prescription came to pharmaceutical compounding room. A pharmacist working in the compounding room needs a liquid vehicle to prepare the medication and used conical flask to measure the required amount. While measuring the vehicle, the a pharmacist made an error.

What could be the cause of this error?

(A) Reading the measurement regardless of the meniscus
(B) Reading the measure after the solvent is thoroughly drained
(C) Selecting the smallest measure that holds the desired volume.
(D) Placing the conical flask on a fixed table.

26. A 14kg child diagnosed for meningitis was prescribed 50 mg/kg/day drug through IV in three divided doses. The drug was available in vial containing 200 mg of powder. The vial was reconstituted to produce a maximum concentration of 45 mg/ml.

How much of solution should be placed in the syringe?

(A) 5.2 ml
(B) 4.5 ml
(C) 3.3 ml
(D) 2.3 ml

27. A newly hired pharmacist started working in dispensary outlets. The pharmacist was guided by seniors on how to dispense medications including labeling and packaging.

What important issues should be told during packaging of medicines?

(A) Suppositories should be packaged in paper made containers
(B) Tablets should be packaged with collapsible tubes
(C) Ointments should be packaged with paper made containers
(D) Liquids should be packaged in light resistant glasses

28. A 14-years-old patient was diagnosed with tonsillitis and the physician prescribed amoxicillin 500 mg BID. The pharmacist in charge dispensed the medication with due counseling. One week later, the patient came to the dispensary again with a prescription indicating the same disease.

What was the most likely reason for the treatment failure?
(A) The dose was lower than the recommended one
(B) The frequency of medication was wrongly prescribed
(C) The frequency of taking medication should be once a day
(D) The pharmacist might have wrongly dispensed amoxicillin plus clavulanate

29. A 30-year-old male patient came to a dispensary with a prescription of Metronidazole 500 mg P.O. TID for 7 days. In the dispensary unit, Metronidazole was available in 250 mg strength.

How should the medicine be labeled before dispensing?
(A) Take three capsule at a time with eight hour difference
(B) Take two capsules at a time with eight hour difference
(C) Take six capsule a day every twelve hour difference
(D) Take three capsule a day every twelve hour difference

30. A 42-year-old male patient was diagnosed with psoriasis and prescribed Betamethasone Dipropionate cream 0.05%. The pharmacist labeled and provided the drug to the patient.

What information should a pharmacist include to minimize side effect?
(A) For external use only
(B) To be applied thinly
(C) Keep out of the reach of children
(D) Discard if lasted more than 4-month.

31. A 60-year-old female patient was diagnosed with Parkinson's disease and taking a combination of carbidopa, levedopa and benztropine. Several months later, the patient came back with a complaint of difficulty of passing stool. Her physician prescribed liquid paraffin Emulsion 10ml P.O. TID again and the pharmacist dispensed the drug with adequate counseling. Three days later, the patient came back saying " I have taken 10 ml every eight hours but I still have the same bowel problem"

What was the most likely missed labeling for this prescription?
(A) For internal use only
(B) Keep in dry and cool place
(C) Discard if lasted more than 4-month.
(D) Shake the bottle well before use

32. A patient was diagnosed with acute coronary syndrome and took prescription of:-
- Nitroglycerin, sublingual, 0.4mg every 05 minutes
- Morphine PO 4mg
- Aspirin 300mg stat P.O. then 75mg P.O. daily
- Clopidogrel 300mg followed by 75mg/d P.O

Which medication should be packaged with a tightly fit glass?
(A) Aspirin
(B) Nitroglycerin
(C) Clopidogrel
(D) Morphine

33. A store pharmacist was conducting annual inventory. After finishing the inventory, the pharmacy auditor found out a gap between the expected and actually counted inventory and requested the pharmacist to reconcile the difference. However, the pharmacist couldn't settle the difference.

What was the most likely factor that the pharmacist missed?
(A) Billing
(B) Ordering
(C) Double-counting
(D) Documentation

34. A pharmacist working in a store was requested for Nasogastric tube through Report and Requisition Form (RRF).

What should the store pharmacist consider before issuing the requested item?
(A) Size
(B) Length
(C) Cost
(D) Thickness

35. A 38-year-old woman taking warfarin for her deep venous thrombosis visits a clinic with chief complaint of fever. Her white blood cell count /WBC/ and renal function test was normal. She also takes combined oral contraceptives. Hence, the physician suspected the patient had systemic fungal infection.

What anti-fungal drug is most appropriate for this patient?
(A) Ketoconazole
(B) Itraconazole
(C) Amphotercin B
(D) Grisofulvin

36. A 28-year-old asthmatic patient on Theophylline therapy came to a dispensary in order to take Cimetidine 400mg tablet PO BID for ten days as per the physician's prescription.

What is the most appropriate recommendation for this case?
(A) Reduce the dose of Theophylline
(B) Increase the dose of Theophylline
(C) Lower the dose of Cimetidine
(D) Replace cimetidine with Famotidine

37. A 63-year-old heart failure patient on an optimized dose of digoxin, furosemide and Spironolactone came to the dispensary to have a pharmacist's advice.

What fruit is most likely to be avoided by this patient?

(A) Orange
(B) Mango
(C) Banana
(D) Lemon

38. A 28-year-old stage-III HIV female patient on TDF+3TC+EFV reported complaint of cough, fever, night sweating and fatigue. Her CD_4+ count is not affected. Her diagnosis was upper respiratory tract infection and clarithromycin 500 mg BID was prescribed.

What is the most appropriate measure to be taken to minimize drug-drug interaction?

(A) Replacing clarithromycin with levofloxacin
(B) Minimizing the dose of efavirenz
(C) Elevating the dose of clarithromycin
(D) Replacing efavirenz with nevirapine

39. A type-II diabetic male patient on Tolbutamide was in a good control, has started sulfaphenazole for his urinary tract infection three days ago. He was suffering with hypoglycemia and came to a dispensary repeatedly for the last two days.

What was the most likely cause of hypoglycemia for this patient?

(A) Sulfaphenazole increases serum level of Tolbutamide by displacing it from its binding site
(B) Tolbutamide increases serum level of Sulfaphenazole by displacing it from its binding site
(C) Sulfaphenazole increases serum level of Tolbutamide by inhibiting metabolizing enzymes
(D) Sulfaphenazole increases serum level of Tolbutamide by enhancing its gastrointestinal absorption

40. A 35-year-old man with a history of penicillin allergy was diagnosed as Pharyngitis and treated with erythromycin 500mg mg QID for 7 days. Besides, he was treated with Cyclosporine 4 mg/kg per day for his steroid-refractory severe colitis.

What is the most likely risk of this treatment?

(A) Renal toxicity
(B) Liver toxicity
(C) Ototoxicity
(D) Ocular toxicity

41. A prescriber, consulted a pharmacist that a client who is on Phenytoin therapy which is very effective medicine wanted to use combined oral contraceptive. The prescriber suspected drug-drug interaction and thus wanted to know the appropriate recommendation.

What is the most appropriate recommendation for this client?
(A) Change Phenytoin with Valproic acid
(B) Decrease the dose of the contraceptive
(C) Increase the dose of the contraceptive
(D) Decrease the dose of the Phenytoin

42. A client came with the prescription containing Carbidopa/Levodopa. The pharmacist dispensed the drug with the necessary information. The client came back two weeks later with the complaint of no improvement.

What was the most likely message the pharmacist missed during counseling?
(A) Avoid high fatty meal
(B) Avoid high carbohydrate meal
(C) Avoid high protein meal
(D) Avoid high fiber meals

43. A 35-year-old HIV patient, who is well treated with TDF+3TC+SQV/RTV before one month took Garlic three weeks ago without consulting the physician or pharmacist. Now, the patient came with complaints of fever, headache, tiredness and fatigue. The patient's CD_4^+ count was reduced significantly and the viral load was elevated.

What was the most likely possible cause of these signs and symptoms?
(A) Garlic decreases serum concentration of Ritonavir
(B) Garlic decreases serum concentration of Lamivudine
(C) Garlic decreases serum concentration of Tenofovir
(D) Garlic decreases serum concentration of Saquinavir

44. A 68-years-old man developed aspiration pneumonia and was put on Ceftriaxone1g I.V. BID for 14 days and Clindamycin 600mg I.V. TID for 14 days. After two days, the patient complained diarrhea and colitis.

What should be recommended to avoid the cause of the above conditions?
(A) Replace Ceftriaxone by benzyl penicillin
(B) Replace Ceftriaxone by Amoxicillin-Clavulanic acid
(C) Increase the dose Clindamycin and Ceftriaxone
(D) Replace Clindamycin by Metronidazole

45. A nurse from neonatal intensive care unit came with an internal facility report and resupplies containing alcohol for infection prevention activities and requested storage condition for the supply.

What should be the most appropriate storage condition for this tablet?
(A) Deep freezer
(B) Cool area
(C) Refrigerator
(D) Moist area

46. A 45-years-old male patient came to the dispensary unit with a prescription of nitroglycerin sublingual tablet.

What should be the appropriate storage condition for this product?
(A) In tightly closed plastic container
(B) In tightly closed glass container
(C) In refrigerator
(D) In deep freezer

47. Many medications were repeatedly stock out in a hospital and patients forced to buy their medication from the private pharmacy. Patients complained the situation to a hospital manager and he/she confirmed that the problem prevailed due to poor documentation practice in the pharmacy.

What type of documentation is missed during recording?
(A) Type, strength and number of dispensed medications
(B) Age and sex of patients using the dispensed drugs
(C) Medical registration and prescription numbers
(D) The prescribers and dispensers name and signature

48. A pharmacist in charge of stock management wanted to update records in order to timely monitor flow of stock.

What should be avoided while recording on stock card?
(A) Using pencils
(B) Using pen
(C) Using inerasable ink
(D) Using permanent markers

49. A physician requested a pharmacist a brief summary of new antifungal drug ''X'' in the market. Unfortunately, the pharmacist didn't have any information about the "X" drug.

What is the most appropriate drug information source the pharmacist should refer?
(A) MEDLINE, in-process
(B) IOWA drug information system
(C) International Pharmaceutical Abstracts
(D) PubMed database

50. A physician requested drug information on a new story regarding the depletion of serum magnesium among patients prescribed with long term proton pump inhibitor. Data from manufacturer and/or post-marketing surveillance program revealed that adverse drug reaction (ADR) was not seen on the clinical trials.

What would be the best internet source for this issue?

(A) www.clinicaltrials.gov
(B) www.mayoclinic.com
(C) www.fda.gov
(D) www.adis.com

51. A hospital planned to develop evidence based practice guideline for malaria and formed a committee comprising members from different clinical departments and administrative representatives. The team performed systematic evaluation and grading of the evidence to develop the guideline though the prevalence of malaria in that area is very low.

What should be the most priority concern remembered by the team?

(A) Assignment of the team
(B) Selection of the disease state
(C) Determining the criteria for the evidences
(D) Addressing the basic clinical question

52. A pharmacist in drug information center planned to write a newsletter on adverse drug reactions of IV fluids.

What is the first step that the pharmacist should do?

(A) Define the information sources
(B) Define the audience
(C) Identify constraints
(D) Design a newsletter

53. A physician told to a hepatitis B positive patient that "currently, there is no curative treatment in our country for this disease and the main management is supportive care". The patient asked a drug information center pharmacist for professional recommendation about the herbal medicine known in the village. Hence, the pharmacist searched for evidences that support the alternative herbal therapy, evaluated, synthesized and formulated the response.

What is the most preferred way to give a response for this request?

(A) Written in face-to-face
(B) Orally in face-to-face
(C) Written through postal service
(D) Orally through phone

54. A known congestive heart failure male patient has been taking ''drug X '' for the last two years. He found an information comparing drugs X and Y on website about the management of heart failure. The patient insisted on switching to this new therapy (drug Y); because this website states that ''drug Y'' is more effective than ''drug X''. The patient had also read several other internet testimonials on treatment with ''drug Y''.

What is the best advice to be given on the use of internet regarding medication?
(A) Discourage from using blogs and patient testimonials for advice.
(B) Caution on opinion pieces and redirect them to search the web for other sites.
(C) Redirect to WebMD to compare treatments for congestive heart failure.
(D) Redirect to better sites & provide with standard questions

55. A colleague asked the pharmacist whether or not Ipratropium Bromide (Atrovent) is approved by Food and Drug Control Authority /FDA/ for the treatment of asthma.

What type of drug information question is this?
(A) Dosing frequency
(B) Adverse reaction
(C) Drug administration
(D) Indication and therapeutic use

56. A nurse working at a hospital asked a pharmacist about the cost of a given drug. After asking some background information, the pharmacist found that the ultimate question asked by the nurse is drug availability issue.

What is the importance of categorizing the ultimate question?
(A) To locate resources
(B) To miss the follow-up step
(C) To use up-to-date resources
(D) To respond at categorization step

57. A known male diabetic patient who has been taking Insulin for the last 25years came for follow-up and reported that he is tired of taking his medications and as a rumor he heard the discovery of a drug that cures diabetes. While checking the news from internet, the patient was right but the information was published at a source "http://www.xxxx.com".

Which statement describes the source of information in the above scenario?
(A) Governmental organization that it is highly reliable
(B) Commercial that it should be highly evaluated
(C) Business group that it lacks credibility.
(D) Personal blog that it lacks credibility

58. A community pharmacist recently heard that a product named Panadol® was removed from the market due to defect of production. The pharmacist wanted to be sure about the news, but he is not capable to identify the original news. Therefore, he requested his colleague where to get the reliable information.

What is the best initial information for such drug information query?
(A) PubMed
(B) Google scholar
(C) Cochrane Library
(D) Reuters health news

59. A physician is seeking information about the use of controlled drugs for reveling muscle spasm. The physician has seen a large number of patients in his practice and seeks information about efficacy, safety, and appropriate dose of the products. He requested you to give information and you took the reference from "Goodman and Gilman's; the pharmacological basis of therapeutics".

What is the benefit of the source of information?
(A) It is free of bias
(B) It is timely resource
(C) It helps for rapid retrieval of information
(D) It helps to access the detail information about the drug

60. A pharmacist is searching for information to determine whether Omeprazole is superior to Pantoprazole in curing Ellison Zolinger Syndrome. The pharmacist found huge number of information from internet and finally decided to screen the scientific literatures based on their quality and reliability.

What is the best study design to compare the efficacy of the above drugs?
(A) Randomized controlled trial
(B) Open label clinical trial
(C) Pseudo clinical trial
(D) Case control study

61. It is common to get many substandard articles in different journals. Consequently, pharmacists are required to critically evaluate and appraise different articles to the information obtained from these articles for different purposes.

What is the most likely reason for facing substandard articles?
(A) Publish or perish dilemma
(B) Writing is only a natural gift
(C) Researches were done in developing countries
(D) Many people are involved in research

62. A newly established drug and therapeutic committee of an institution has planned to prepare institutional drug formulary. A drug information center was requested to collect and prepare monograph prior to formulary development for selected drugs.

What is the appropriate tertiary literature used as a reference for monograph evaluation?
(A) www.clinicalpharmacology.com
(B) www.epocrates.com
(C) www.merck.com
(D) www.ashp.org

63. A pharmaceutical company representative contacted a pharmacist to promote an anti-depressive agent to treat chemotherapy-induced peripheral neuropathy. The representative claims that the company's medication is very effective in reducing pain for patients with chemotherapy-induced peripheral neuropathy and the product should be selected as first-line therapy. The representative presented a study to support his claim.

What blinding technique is most appropriate for such studies?
(A) Non-blinding
(B) Single-blinding
(C) Double-blinding
(D) Triple-blinding

64. A pharmacist wanted to compare efficacy of Salbutamol with Aminophyline among asthmatic patients. The pharmacist started evaluating the literature by sections; introduction, method, result, discussion and conclusion.

Which section of a literature shows hypothesis of study?
(A) Introduction
(B) Result
(C) Discussion
(D) Conclusion

65. A 45-year-old male patient who has renal dysfunction visits a doctor for an active pain. A physician consulted a pharmacist about the non steroidal anti-Inflammatory drug /NSAID/ which is suitable to prescribe for this patient.

What is the most recommended drug of choice for this patient?
(A) Tolmetin
(B) Ibuprofen
(C) Nabumetone
(D) Indomethacin

66. The establishment and maintenance of a drug formulary requires drugs or drug classes to be objectively assessed based on scientific information such as efficacy, safety, uniqueness, cost, and other appropriate items in relation to similar agents.

What is the best way to include drugs in to the formulary?
(A) Drug use evaluation
(B) Drug evaluation monographs
(C) Standard treatment guideline
(D) Subjective physician experience

67. A physician requested a pharmacist about the dose of Enalapril for a patient admitted with a heart failure. The pharmacist recommended 2.5mg Enalapril daily. Latter, the pharmacist went to clerk the patient and found that the BP 80/60mmHg, on Furosemide 20mg TID and dehydrated. Considering the patient condition, the pharmacist informed the physician that Enalapril is not good even at a low dose since the patient is hypotensive.

What activity was the pharmacist doing after recommending the medication?
(A) Follow up
(B) Communication
(C) Documentation
(D) Dissemination

68. A pharmacist working in a drug information center /DIC/ of a hospital utilized a modified systematic approach that includes data evaluation, analysis and synthesis to provide drug information to clients. While undertaking the activities, the pharmacist presented the competing view points and considerations.

What is the next step in response formulation for logical argument?
(A) Disprove the major strengths and present weaknesses
(B) Defend the major weaknesses and promote the strengths
(C) State the assessment of the literature or information reviewed
(D) Reiterate the final assessment in support of the superior viewpoints

69. A 45-year-old male patient came to hospital with complaints of fever, diarrhea, vomiting, headache, fatigue, significant weight loss and night sweats. Physical examination shows oral ulcer, leukopenia, maculopapular rash involving the trunk and lymphadenopathy. The patient is not taking any kind of medication. The physician suspected acute HIV infection and sent the patient for screening.

What is the most indicative sign for HIV infection in this patient?
(A) Leukopenia
(B) Night sweat
(C) Lymphadenopathy
(D) Oral ulcer

70. A three-week-old infant was brought to the neonatology unit with inability of breast feeding, pyrexia and increasing drowsiness. CSF analysis reveals 1100 WBC/μL of which 80% are polymorphs, low glucose, elevated protein levels and no organism seen in Gram-stained smear of the CSF. The diagnosis is acute purulent meningitis.

What is the empirically targeted bacterium?
(A) Streptococcus pneumonia
(B) Group B streptococcus
(C) Listeria monocytogen
(D) Pseudomonas aeruginosa

71. A 39-year-old man was brought to an emergency department with altered mental status. On physical examination, he is in marked distress, T^0= 39 ^{0}C, BP= 90/60 mmHg, and RR=30breaths/min. Neurologic examination showed evidence of neck stiffness; he was lethargic and Kernig's sign is positive. He was given Cefotaxime and Vancomycin as initial empiric therapy. In addition, the physician needs to add dexamethasone.

What makes the use of dexamethasone questionable?
(A) Increased cost of dexamethasone
(B) Adverse effect on lipid profile
(C) Decreased CSF concentration of antibiotics .
(D) Increased risk of neurologic sequelae

72. A 28-year-old woman has been repeatedly treated for urinary tract infections. In the last one year, she had three episodes of urinary tract infections. Currently, she is taking cotrimoxazole suppressive therapy. Eleven days later, she came back to an emergency department with a pruritic maculopapular rash and fever.

What type of drug therapy problem happened in this patient?
(A) Dose too high
(B) Dose too low
(C) Noncompliance
(D) Adverse drug reaction

73. A 40-year-old woman was brought to an emergency department with fever and severe headache. Her history was significant for Hodgkin lymphoma, which is in remission. Upon further investigations, she was diagnosed with cryptococcal meningitis. She is also taking Ranitidine as a treatment for her dyspepsia. The physician planned to give Fluconazole to treat cryptococcal meningitis as treatment opition.

What is the most pertinent cause of drug therapy problem?
(A) Ranitidine decreases absorption of Fluconazole
(B) Ranitidine increases absorption of Fluconazole
(C) Fluconazole induces metabolism of Ranitidine
(D) Fluconasole decreases absorption of Ranitine

74. A 26-year- old male patient developed pneumonia and was taking Ampicillin 500mg QID IV therapy. During ward round, it was noticed that it is atypical pneumonia. On pharmaceutical assessment, a patient has drug related needs to his current prescription.

What is the drug therapy problem identified in this patient?
(A) Dose too high
(B) Needs additional drug therapy
(C) Ineffective drug therapy
(D) Unnecessary drug therapy

75. A 15-day-old new born baby was brought to hospital with high grade fever and inability to suck. The attending pediatrician suspected bacterial pneumonia.

What is the most appropriate first line regimen?

(A) Amoxicillin + Gentamicin
(B) Ampicillin + Gentamicin
(C) Tetracycline + Gentamicin
(D) Vancomycin + Gentamicin

76. A 30-year-old pregnant woman who is in third trimester pregnancy came to the clinic with sign and symptom of urinary frequency, urgency and burning sensation on urination. She has no costovertebral angle tenderness and no known drug allergies. Urine analysis shows many gram negative bacteria. The physician prescribed her cotrimoxazole suspecting lower urinary tract infection.

What is the pharmacist's best recommendation for this patient?

(A) Change Cotrimoxazole to Ciprofloxacin
(B) Change Cotrimoxazole to Nitrofurantoin
(C) Change Cotrimoxazole to Ceftriaxone
(D) No need of changing Cotrimoxazole

77. During multidisciplinary team round at medical ward, you noticed a 46-year-old known HIV infected female patient on HAART regimen of Zidovudine + Lamivudine +Abacavir therapy. She is also TB infected and currently on first line ant-tuberculosis regimen. You informed the team that this regimen has to be modified.

What is the appropriate information you will recommend the team?

(A) There is a serious drug interaction among HAART drugs
(B) The risk of virological failure is high
(C) The future option for this patient is compromised
(D) This regimen is contra-indicated in patients with tuberculosis

78. Some anti-microbial have been associated with a pharmacodynamic phenomenon known as a post-antibiotic effect of delayed regrowth of bacteria following exposure to an antibiotic. This helps to have extended dosing schedule to improve patient adherence.

What is the most effective drug as once daily dose in adult with bacterial infection?

(A) Minocycline
(B) Erythromycin
(C) Gentamicin
(D) Ampicillin

79. A 23-year-old male patient who is diagnosed with Schizophrenia cannot memorize whether he took his medication every day. Due to poor adherence to his medication and follow up, the physician prescribed him Haloperidol 50mg in the form of depot preparation. The patient is also advised to come after four weeks to refill his next dose.

What potential drug therapy problem will encounter this patient?
(A) Haloperidol depot is ineffective
(B) Additional drug needed for Side Effect
(C) Dosage of Haloperidol is too high
(D) Depot formulation is not indicated

80. A 25-years-old male schizophrenia patient has been taking Haloperidol 10mg PO for the last two weeks. On return for follow-up at psychiatry clinic, his sister reported that he is not able to sit stable during meal and/or coffee time. He moves here and there without any purpose. Even on sitting he oscillates his leg back and forth. As clinical pharmacy service provider, you suspected drug induced adverse effect from the current regimen.

What potential type of adverse effect you may suspect in this patient?
(A) Akathesia
(B) Pseudoparkisonism
(C) Dystonia
(D) Tardive dyskinesia

81. A 65-year-old female patient was on follow up for Major Depressive Disorder at psychiatry clinic. She has been taking Sertraline 50mg per day for the last one month. Few days after taking the medication, she came to a community pharmacy with a chief compliant of difficulty in falling sleep.

What will be the appropriate intervention for her complaint?
(A) Change the medication
(B) Take the medicine intermittently
(C) Take the medicine in the morning
(D) Decrease the dose of the medication

82. A 75-year-old woman came to ambulatory clinic for follow up. She is a known cardiac patient for the last ten years and she is taking Digoxin 0.25mg PO daily and Enalapril 10mg BID. Two weeks back, she has been diagnosed with Major Depressive Disorder (MDD).

What will be the best drug intervention for the treatment of MDD in this situation?
(A) Sertraline
(B) Selengiline
(C) Imipramine
(D) Bupropion

83. An 11-year-old female epileptic patient came to ambulatory clinic for routine checkup. She has been taking Phenytoin 100mg PO TID and Valproate 200mg PO TID for the last seven years. The epilepsy is adequately controlled and she has not encountered any seizure attacks for five years. The attending physician is evaluating her to stop the medications.

What is the most appropriate way of stopping her medications?
(A) Stop both medications on the current follow up.
(B) Tapering and then stopping both medication at the same time
(C) Tapering one medication first then the next medication finally stop both
(D) Stop Phenytoin first and the Valproate without tapering.

84. A 28-year-old woman diagnosed with juvenile myoclonic epilepsy at her age of 16 came to the pharmacist to consult regarding the effect of medicine she has been taking. She is taking Valproate 1200 mg a day and her epilepsy has been well controlled.

What would be the appropriate recommendation for this patient?
(A) To add lamotrigine to her regimen
(B) To decrease dose of sodium valproate
(C) To change sodium valproate to lamotrigine
(D) To withhold sodium valproate during pregnancy

85. A 25-year-old woman was diagnosed with migraine type headache two years back. She has been taking Sumatriptan 100mg daily, Paracetamol 1000gm as needed and Ibuprofen 400mg TID on different occasions. However, she experienced frequent, prolonged, or bothersome aura before a full blown headache, which affects her daily activity. As a result, the physician decided to start prophylactic therapy.

What is the most appropriate medication to be used in this case?
(A) Naproxen
(B) Amitriptyline
(C) Atenolol
(D) Aspirin

86. A 10-year-old boy has been taking anti-epileptic medication for the treatment of generalized tonic-clonic seizures that he had developed a year ago. After starting anti-epileptic medication, he exhibited moderate gingival hyperplasia resulting in poor oral hygiene and halitosis.

Which anti-epileptic medication was responsible for gingival hyperplasia?
(A) Carbamazepine
(B) Phenobarbital
(C) Lamotrigine
(D) Phenytoin

87. A 55-year-old, 55-kg (BMI: 22 m^2) man with a history of type II diabetes mellitus came to hospital. His behavioral measure is significant for smoking. His present chief complaint is right upper thigh pain while walking around the block. The pain has gradually increased during the past 12 months, but only recently has become intolerable. The pain is relieved within minutes after he stopped walking. The attending physician suspected peripheral arterial disease. Pertinent laboratory values include: total cholesterol, 180 mg/dL LDL, 80 mg/dL, HDL, 44 mg/dL and Fasting glucose, 190 mg/dL.

What are the most related risk factors for peripheral arterial disease in this patient?

(A) Smoking and type 2 diabetes
(B) Type 2 diabetes and over weight
(C) Type 2 diabetes and hyperlipidemia
(D) Smoking and hyperlipidemia

88. A 74-year-old man with a compliant of weakness and dizziness came to the outpatient cardiac clinic. On physical examination, there is an elevated jugular venous pressure, pulmonary and peripheral edema.

What is the most likely cause of elevated jugular venous pressure?

(A) Increased after load
(B) Increased preload
(C) Increased contractility
(D) Increased peripheral resistance

89. A 64-year-old woman with a history of non-ischemic cardiomyopathy, came to an emergency department for shortness of breath. Physical examination confirms findings associated with acute decompensated heart failure. Her extremities are warm, and blood pressure is 110/78 mmHg with a heart rate of 75 beats per minutes. Her laboratory studies return with sodium of 128 mEq/L and creatinine of 2.5 mg/dL (which is increased from her prior level of 1.2 mg/dL). Chest x-ray shows a diffuse alveolar filling pattern consistent with pulmonary edema.

What is the most appropriate drug therapy for this patient?

(A) Administer digoxin 250 µg IV
(B) Administer furosemide 40 mg IV
(C) Initiate metoprolol 25mg PO daily
(D) Start dobutamine at 5 µg/kg/min

90. A 38 year-old male patient with chronic kidney disease (CKD) for the past six months visted a hospital. Currently the BP of the patient is 155/95 mmHg. The clinician wants to start anti-hypertensive medication that has been shown to slow progression of CKD.

Which drug is the most appropriate to be initiated in this patient?

(A) Amlodipine
(B) Enalapril
(C) Hydrochlorothiazide,
(D) Metoprolol

91. A 56-years-old gentle man came to the hospital with a diagnosis of primary hypertension. His attending physician approached a pharmacist to select appropriate drug from calcium channel blockers (CCBs). On medication history assessment, he has no contraindications to calcium channel blockers.

Which medication should be avoided for this patient?
(A) Immediate-release of Nifedipine 20 mg TID
(B) Sustained-release of Verapamil 180 mg daily
(C) Immediate-release of Amlodipine 5 mg daily
(D) Sustained-release of Diltiazem 120 mg daily

92. A 53 year-old woman came to a hospital with complaints of dyspnea on exertion and palpitations for the last 2 weeks. Cardiac examination reveals an irregularly irregular rhythm; 4 cm distended jugular veins, and grade II pitting edema. The electrocardiogram finding shows atria fibrillation. An echocardiogram result reveals a left ventricular ejection fraction of 35%. The patients started on Furosemide, Enalapril, Digoxin, and Aspirin. On her next follow up, she reported that she developed hazy vision and difficulties in both reading and red–green color perception.

What drug is the mostly responsible for her visual disturbances?
(A) Furosemide
(B) Enalapril
(C) Digoxin
(D) Aspirin

93. A 63-year-old female patient was diagnosed with Stage C heart failure and an ejection fraction of 25%, is currently taking lisinopril 20 mg daily, furosemide 40 mg twice daily, digoxin 0.125 mg daily, and carvedilol 3.125 mg twice daily. Today, she reported increased shortness of breath, fatigue, and ankle swelling. She also reports a 10 kg weight gain over the past week. The lab values are significant for serum potassium of 5.2 mEq/L (5.2 mmol/L) and serum creatinine of 2.2 mg/dL (194 µmol/L).

What is the most appropriate initial intervention for this patient?
(A) Increase dose of lisinopril to 20 mg twice daily
(B) Add Spironolactone 25 mg daily
(C) Increase dose of furosemide to 80 mg twice daily
(D) Increase dose of digoxin to 0.25 mg daily

94. A 55 years old female patient was admitted with a diagnosis of deep vein thrombosis (DVT). One year back, she was admitted for the same diagnosis and treated. In her previous admission, she had a history of heparin induced thrombocytopenia. Laboratory investigations include Hemoglobin: 11.5, Hematocrit 34%, platelet 420,000. Her current normalization (INR) is 1.5. Other lab values are within the normal range.

What is the appropriate intervention for this patient?
(A) Start warfarin with a target INR of 2 to 3
(B) Start unfractionated heparin, since the patient has good platelet count
(C) Start direct thrombin inhibitor with dabigatran
(D) Start dalteparin with a target PTT of 60 to 80

95. A 71-year-old woman weighing 53kg, was admitted to hospital. She had been treated for chronic heart failure for three years and had a history of atrial fibrillation and hypertension. Now she has been referred to hospital with a suspected deterioration in her condition. She reported episodes of discomfort in the chest, which she described as 'palpitations' rather than tightness or pain. Her medication on admission was: Hydrochlorothiazide 25 mg daily, Furosemide 40 mg daily, Enalapril 10 mg daily, Digoxin 0.125 mg daily, Simvastatin 40 mg at night, Warfarin 2.5 mg daily.

What additional drug do you recommend for this patient?
(A) Metoprolol 50 mg daily
(B) Valsartan 80 mg daily
(C) Amlodipine 5 mg daily
(D) Clonidine 0.1 mg twice daily

96. A 65-year-old male patient with a history of hypertension was recently diagnosed with Stage C heart failure and echocardiogram shows an ejection fraction of 30%. His current medications include sustained-release diltiazem 180 mg daily, digoxin 0.125 mg daily, and furosemide 40 mg daily. Currently the patient's vital signs are: BP 145/90 and pulse 82 beats/min.

What is the appropriate drug therapy for this patient?
(A) Add Enalapril 10 mg daily and Metoprolol 50 mg daily to current regimen
(B) Add Metoprolol 50 mg daily to current regimen
(C) Discontinue diltiazem and add Enalapril 10 mg and Metoprolol 50 mg daily
(D) Discontinue diltiazem and add valsartan 80 mg daily to current regimen

97. A 52-year-old man with mild persistent asthma came to hospital. His asthma symptoms began when he was 32 years of age, and he has never smoked. He has had numerous drug regimens for his asthma over the years, but he tells a clinician that he wants the simplest regimen possible.

What is the most appropriate choice as controller therapy?
(A) Inhaled short acting beta2 agonist
(B) Inhaled corticosteroid
(C) Theophylline oral
(D) Mast cell stabilizer

98. A 69-year-old man with chronic obstructive pulmonary disease has been on treatment taking inhaled Albuterol and inhaled Beclamethasone and admitted to the hospital three times over the past year for chronic obstructive pulmonary disease exacerbations. He has daily cough with increased volume of purulent sputum production and an FEV1 of 45% predicted. Previously, he used to smoke a pack of cigarettes daily for 50 years, but quitted a year ago. His oxygen saturation on room temperature is 91%.

What is most suitable therapy for this patient?
(A) Azithromycin 250 mg three times weekly
(B) Oral prednisolone
(C) Theophylline 300 mg daily
(D) Inhaled Salmeterol twice a day

99. A 24-year-old woman was diagnosed with asthma 4 months ago and was treated with inhaled Albuterol as needed. Since her last visit, she feels generally well and typically requires using her inhaler approximately four to seven times a week when around pollen or cats or when exercising in cold air approximately two times a week. She is not on any other medications.

What is the appropriate additional therapy for this patient?
(A) Add inhaled beclomethasone
(B) Add inhaled salmeterol twice a day
(C) Add inhaled ipratropium
(D) Add inhaled nedocromil

100. A 58-year-old female with a chronic obstructive pulmonary disease exacerbation has recently been discharged from a hospital. This is the third hospitalization in the past one year for similar problem, although the patient reports only mild symptoms in between exacerbations. The patient is on Salmeterol inhalation twice daily and Tiotropium inhalation once daily prior to her admission. Her current FEV1 is below 60%.

What is the correct medication regimen for this patient?
(A) Discontinue the tiotropium and add tiotropium/albuterol fixed combination
(B) Discontinue salmeterol and add salmeterol/fluticasone fixed combination
(C) Discontinue the tiotropium and add ipratropium
(D) Discontinue salmeterol and add albuterol

THE END

Answer

1 C
2 B
3 D
4 B
5 B
6 D
7 C
8 B
9 D
10 A
11 C
12 B
13 B
14 B
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